

Applicant : Gossett
Serial No. : 10/015,013
Filed : December 11, 2001
Page : 7 of 13

Attorney's Docket No.: 16113-0384001 / GP-666-00-US

Amendments to the Drawings:

The attached six replacement sheets of drawings include only changes to the headings. Applicant previously submitted six replacement sheets of formal drawings. The Examiner accepted these drawings in substance, but objected to the heading in each sheet for being labeled "Replacement" rather than "Replacement Sheet." The replacement sheets are labeled as requested. No new matter has been added.

Attachments following last page of this Amendment:

Replacement Sheets (six pages)

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REMARKS

Applicant has received the Office Action mailed February 5, 2008. In this response, Applicant has canceled, without prejudice, claims 1, 2, 4-7, 10, 11, 13, 14 and 16-19; amended claims 20, 21, 23, 24, 30 and 31; and added claims 32-39. Claims 20, 21, 23-25, and 30-39 are pending, of which claims 20, 30, 31 and 32 are independent. Applicant requests reconsideration of the pending claims in view of the amendments and the following remarks.

Summary of Examiner Interview

Applicant appreciates the courtesies extended by Examiner Tse during the telephone interview of April 3, 2008, during which Applicant and the Examiner discussed possible amendments to three of the independent claims. The Examiner apprised Applicant of his broad reading of the Li reference and suggested additional amendments. Although Applicant neither agrees with nor concedes the Examiner's broad reading of Li, additional amendments believed to clearly distinguish the pending claims are presented herein, in order to expedite prosecution. The additional amendments are believed to be in line with the Examiner's suggestions.

Objection to the drawings

The Examiner objected to the drawings as follows:

3. The drawings were received on August 13, 2007. These drawings are acceptable. However, "REPLACEMENT" in each of sheets 1-6 should be labeled "Replacement Sheet" as required. Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

As indicated above, replacement drawings with appropriate headings are provided herewith; Applicant requests that the objection to the drawings be withdrawn.

Objection to the specification

The Examiner objected to the specification as follows:

4. The disclosure is objected to because of the following informalities: at page 11, line 10, " $\hat{x}(n)$ " needs to be corrected and at line 19, there should be a space between " $b;(n)$ " and "have. Appropriate correction is required.

As indicated above, Applicant has added a space where requested. Applicant disagrees that any correction is needed for " $\hat{x}(n)$." Page 11, line 10 recites both "the original input signal $x(n)$ " and "its prediction $\hat{x}(n)$." The " $x(n)$ " and " $\hat{x}(n)$ " signals are different and are distinguished by the hat symbol; presence of this hat symbol is not a typographical error. Applicants request that the objections to the specification be withdrawn.

Objections to the claims

The Examiner objected to various claims as follows:

5. Claims 1-2, 4-7, 10-14, 16-21, 23-25 and 30-31 are objected to because of the following informalities:
In claim 11, lines 2 and 8, "signal;" and "said corresponding" should be "signal; and" and "said", respectively.
In claim 6, "Claim 1 further comprising" should be "Claim 1, wherein the receiver comprises".
In line 10, line 2, the word "purposes" should be deleted.
The dependent claims 2, 4-5 and 7 are objected to because they dependent from claim 1.
In claim 11, lines 3-4, "periodic or quasiperiodic" should be "the periodic or quasi-periodic".
The dependent claims 13-14 and 16-19 are objected to because they dependent from claim 11.
In claim 20, lines 4 and 9, "spread spectrum" should be "received spread spectrum" and line 8, "signal;" should be "signal; and".
The dependent claims 21 and 23-25 are objected to because they dependent from claim 20.
In claim 30, line 4, "said spread spectrum" should be "said received spread spectrum"; line 10, "coefficients;" should be "coefficients; and"; and line 11, "the said spread" should be "the received spread".
In claim 31, line 3, "a spread" should be "the spread". Appropriate correction is required.

Applicant has canceled claims 1-2, 4-7, 10-14, and 16-19, and amended claims 20, 21, 23, 24, 30 and 31. Accordingly, the claim objections are either moot, or they have been addressed, and Applicant requests that the objections to the claims be withdrawn.

Claim Rejections—35 U.S.C. §§ 102 and 103

The Examiner rejected various claims under 35 U.S.C. § 102. These claims have been canceled without prejudice, and the rejections under § 102 are therefore moot.

The Examiner rejected under 35 U.S.C. § 103 various other claims, including pending independent claims 20, 30 and 31, as follows:

9. Claims 1-2, 4-7, 10, 20-21, 23-25 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the conventional art described in the instant application in view of Li et al..

Regarding claims 1-2, 10, 20-21 and 30-31, the instant application clearly describes that in the prior art, the km terms are used to model speech. However, note that there are resulting error terms, $e(n)=fp(n)$ and $bp(n)$, which are also generated as an output from the LPC filter. In the prior art, these error terms are simply discarded and not used in any way. However, in the present invention, the error term is kept whereas the linear predictive terms are discarded. In other words, the $e(n)=fp(n)$ and $bp(n)$ signals are passed on through the receiver, while the km signal is discarded. See page, 19, lines 10-18. Therefore, all the claim subject matter recited in claims 1, 20, 30 and 31 are well known in the art, except, the predictive error is being used to recover or retrieve information in the spread spectrum signal.

As described in paragraph 7 above, Li's RLS lattice adaptive filter shown in Fig. 6 is implemented in the detection receiver of Fig. 4 for performing estimated values of channel fading coefficients, forward and backward prediction errors or coefficients. The detailed block diagram of the RLS lattice adaptive filter shown in Fig. 6 for providing forward and backward prediction errors or coefficients is coupled to the Viterbi decoder 205 and the QPSK demodulation circuit 206 of a CDMA receiver circuit of Fig. 4. Inherently, the Viterbi decoder 205 and the QPSK demodulation circuit 206 recovers the information in the received spread spectrum signal, for example, to recover the original spread spectrum signal transmitted from a CDMA transmitter of the CDMA communication system, based on the forward and backward prediction errors or coefficients generated by the RLS lattice adaptive filter.

Therefore, it would have been obvious to one of ordinary skill in the art that the prediction error or coefficients generated by a prediction filter is being used for further processing in a prior art receiver as taught by Li, for example, by the Viterbi decoder or/and the QPSK demodulator of the CDMA detection receiver in order to recover the information in the received spread spectrum signal, for instance, to recover the original spread spectrum signal transmitted from a CDMA transmitter of the CDMA communication system, based on the forward and backward prediction errors or coefficients generated by the RLS lattice adaptive filter. (Emphasis added).

Without conceding the Examiner' position vis-à-vis the claims in their previous form, Applicant has amended independent claims 20, 30 and 31 to recite, *inter alia*, that the spread spectrum signal "comprises a transmitted data component and a periodic or quasi-periodic interference component" and to further recite a "synthesis filter" that is used to recover the "transmitted data component ... based on said ... error coefficients, and not based on said ... linear predictive coefficients." Support for the amendments can be found in the originally filed

specification, including, for example, at page 12, lines 3-5; page 19, lines 10-18; page 20, lines 7-14; page 21, lines 8-12; and page 22, lines 7-9. Accordingly, no new matter has been added.

As amended, Applicant submits that the independent claims clearly distinguish over the cited references. First, as a preliminary matter, Applicant notes that Li relates to “estimating flat fading channel in CDMA communication system [sic]” (Li, Abstract), not to *recovering a transmitted data component* from a spread spectrum signal. Second, Applicant finds no description or suggestion of any *synthesis filter* in Li or in the Examiner’s combination of Li and “the conventional art”—much less a synthesis filter that is employed to recover a transmitted data component based on error coefficients and not based on linear predictive coefficients. Rather, as previously argued, Applicant understands conventional systems, including Li’s system, to use error coefficients only to refine predictive coefficients and not to actually recover data. In fact, Applicant submits that conventional systems and the cited references and their combinations teach away from employing error coefficients in the manner recited in Applicant’s claims.

The Examiner appeared to acknowledge this point, by noting, as reproduced above, that “all the claim subject matter recited in claims 1, 20, 30 and 31 are well known in the art, *except, the predictive error is being used to recover or retrieve information in the spread spectrum signal.*” The Examiner’s focus following this quote in the above-reproduced rejection, and in the telephone interview, appears to be on the Examiner’s interpretation of the breadth of “*using the determined error coefficients to recover information.*” Without conceding the Examiner’s position vis-à-vis the previous language, Applicants submit that the presently submitted amendments, relating to employing a *synthesis filter* to recover a *transmitted data component* based on the error coefficients and not on linear predictive coefficients clarify Applicant’s intended scope of the current form of the claims in a manner that clearly distinguishes over the combination of Li and the conventional art, and over the other art of record.

For at least the above reasons, Applicant submits that pending independent claims 20, 30 and 31 are patentable; and Applicant requests that the § 103 rejections of these claims be withdrawn, as well as the rejections of the corresponding dependent claims 21 and 23-25 be withdrawn.

New claims

New claims 32-39 have been added. The new claims are apparatus claims that generally correspond to other pending method claims and accordingly find support in the originally filed method and apparatus claims, in the above-referenced portions of the originally filed specification, and in the originally filed drawings. No new matter has been added.

Applicant submits that the new claims are patentable for at least those reasons provided above with respect to the method claims.

Conclusion

Applicant respectfully submits that pending claims 20, 21, 23-25, and 30-39 are in condition for allowance and request that the Examiner allow them.

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to this amendment.

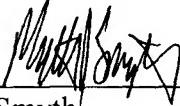
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Submitted herewith is a Request for Continued Examination, a Petition for One-Month Extension of Time, and authorizations to charge the corresponding fees to deposit account 06-1050. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: JUNE 5, 2008


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